

WHAT IS CLAIMED IS:

1. A method of treating a subject having a condition, comprising:
 contacting an area of the subject having the condition with a
 nanocrystalline material that comprises:
 5 a metal; and
 an element selected from the group consisting of oxygen, nitrogen,
 carbon, boron, sulfur, a halogen, phosphorus, silicon, hydrogen and combinations thereof,
 wherein the nanocrystalline material contains at least about one atomic
 percent of the element.
- 10 2. The method of claim 1, wherein the condition is a respiratory condition.
3. The method of claim 2, wherein the condition is selected from the group
 consisting of bacterial conditions, biofilm conditions, microbial conditions, inflammatory
 15 conditions, fungal conditions, viral conditions, autoimmune conditions, idiopathic
 conditions, hyperproliferative conditions, noncancerous growths, cancerous conditions
 and combinations there.
4. The method of claim 2, wherein the condition is selected from the group
 20 consisting of asthma, emphysema, bronchitis, pulmonary edema, acute respiratory
 distress syndrome, bronchopulmonary dysplasia, fibrotic conditions, pulmonary
 atelectasis, tuberculosis, pneumonia, sinusitis, allergic rhinitis, pharyngitis, mucositis,
 stomatitis, chronic obstructive pulmonary disease, bronchiectasis, cystic fibrosis and
 combinations thereof.
- 25 5. The method of claim 1, wherein the condition comprises a musculo-
 skeletal condition.
6. The method of claim 5, wherein the condition is selected from the group
 30 consisting of bacterial conditions, microbial conditions, inflammatory conditions, fungal
 conditions, viral conditions, autoimmune conditions, idiopathic conditions,

hyperproliferative conditions, noncancerous growths, cancerous conditions and combinations thereof.

7. The method of claim 5, wherein the musculo-skeletal condition is selected
5 from the group consisting of tendonitis, osteomyelitis, fibromyalgia, bursitis, arthritis and combinations thereof.

8. The method of claim 1, wherein the condition comprises a circulatory
condition.

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9. The method of claim 8, wherein the condition is selected from the group
consisting of bacterial conditions, microbial conditions, inflammatory conditions, fungal
conditions, viral conditions, autoimmune conditions, idiopathic conditions,
hyperproliferative conditions, noncancerous growths, cancerous conditions and
15 combinations thereof.

10. The method of claim 8, wherein the circulatory condition is selected from
the group consisting of arteriosclerosis, lymphoma, septicemia, leukemia, ischemic
vascular disease, lymphangitis, atherosclerosis and combinations thereof.

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11. The method of claim 1, wherein the condition is selected from mucosal
conditions, serosal conditions and combinations thereof.

12. The method of claim 11, wherein the condition is selected from the group
25 consisting of bacterial conditions, microbial conditions, inflammatory conditions, fungal
conditions, viral conditions, autoimmune conditions, idiopathic conditions,
hyperproliferative conditions, noncancerous growths, cancerous conditions and
combinations thereof.

13. The method of claim 11, wherein the condition is selected from the group
30 consisting of pericarditis, Bowen's disease, stomatitis, prostatitis, sinusitis, allergic

rhinitis, digestive disorders, peptic ulcers, esophageal ulcers, gastric ulcers, duodenal ulcer, esophagitis, gastritis, enteritis, enterogastric intestinal hemorrhage, toxic epidermal necrolysis syndrome, Stevens Johnson syndrome, fibrotic conditions, bronchitis, pneumonia, pharyngitis, common cold, ear infections, sore throat, sexually transmitted diseases, inflammatory bowel disease, colitis, hemorrhoids, thrush, dental conditions, oral conditions, conjunctivitis, periodontal conditions and combinations thereof.

14. The method of claim 1, wherein the condition comprises cancer.

10 15. The method of claim 14, wherein the cancer is selected from the group consisting of tumors, hematologic malignancies and combinations thereof.

16. The method of claim 1, wherein the area of the subject is selected from the group consisting of a hyperplastic tissue, a tumor tissue, a cancerous lesion and combinations thereof.

17. The method of claim 16, wherein the method induces apoptosis at the area of the subject.

20 18. The method of claim 16, wherein the method modulates matrix metalloproteinases at the area of the subject.

19. The method of claim 1, wherein the condition is selected from skin conditions, integument conditions and combinations thereof.

25 20. The method of claim 19, wherein the condition is selected from the group consisting of bacterial conditions, microbial conditions, inflammatory conditions, fungal conditions, viral conditions, autoimmune conditions, idiopathic conditions, hyperproliferative conditions, noncancerous growths, cancerous conditions and combinations thereof.

21. The method of claim 19, wherein the condition is selected from the group consisting of a burn, eczema, erythroderma, an insect bite, mycosis fungoides, pyoderma gangrenosum, erythema multiforme, rosacea, onychomycosis, acne, psoriasis, Reiter's syndrome, pityriasis rubra pilaris, hyperpigmentation, vitiligo, hypertrophic scarring,
 5 keloid, lichen planus, age related skin disorders, hyperproliferative variants of the disorders of keratinization and combinations thereof.

22. A method of treating a subject having a condition, comprising:
 contacting an area of the subject having the condition with an atomically
 10 disordered, crystalline material that comprises:
 a metal; and
 an element selected from the group consisting of oxygen, nitrogen, carbon, boron, sulfur, a halogen, phosphorus, silicon, hydrogen and combinations thereof,
 wherein the atomically disordered, crystalline material contains at least
 15 about one atomic percent of the element.

23. The method of claim 22, wherein the condition is a respiratory condition.

24. The method of claim 23, wherein the condition is selected from the group
 20 consisting of bacterial conditions, biofilm conditions, microbial conditions, inflammatory conditions, fungal conditions, viral conditions, autoimmune conditions, idiopathic conditions, hyperproliferative conditions, noncancerous growths, cancerous conditions and combinations thereof.

25. The method of claim 23, wherein the condition is selected from the group
 consisting of asthma, emphysema, bronchitis, pulmonary edema, acute respiratory distress syndrome, bronchopulmonary dysplasia, fibrotic conditions, pulmonary atelectasis, tuberculosis, pneumonia, sinusitis, allergic rhinitis, pharyngitis, mucositis, stomatitis, chronic obstructive pulmonary disease, bronchiectasis, cystic fibrosis and
 30 combinations thereof.

26. The method of claim 22, wherein the condition comprises a musculo-skeletal condition.

27. The method of claim 26, wherein the condition is selected from the group
5 consisting of bacterial conditions, microbial conditions, inflammatory conditions, fungal conditions, viral conditions, autoimmune conditions, idiopathic conditions, hyperproliferative conditions, noncancerous growths, cancerous conditions and combinations thereof.

10 28. The method of claim 26, wherein the musculo-skeletal condition is selected from the group consisting of tendonitis, osteomyelitis, fibromyalgia, bursitis, arthritis and combinations thereof.

29. The method of claim 22, wherein the condition comprises a circulatory
15 condition.

30. The method of claim 29, wherein the condition is selected from the group consisting of bacterial conditions, microbial conditions, inflammatory conditions, fungal conditions, viral conditions, autoimmune conditions, idiopathic conditions,
20 hyperproliferative conditions, noncancerous growths, cancerous conditions and combinations thereof.

31. The method of claim 29, wherein the circulatory condition is selected from the group consisting of arteriosclerosis, lymphoma, septicemia, leukemia, ischemic
25 vascular disease, lymphangitis, atherosclerosis and combinations thereof.

32. The method of claim 22, wherein the condition is selected from mucosal conditions, serosal conditions and combinations thereof.

30 33. The method of claim 32, wherein the condition is selected from the group consisting of bacterial conditions, microbial conditions, inflammatory conditions, fungal

conditions, viral conditions, autoimmune conditions, idiopathic conditions, hyperproliferative conditions, noncancerous growths, cancerous conditions and combinations thereof.

5 34. The method of claim 32, wherein the condition is selected from the group consisting of pericarditis, Bowen's disease, stomatitis, prostatitis, sinusitis, allergic rhinitis, digestive disorders, peptic ulcers, esophageal ulcers, gastric ulcers, duodenal ulcer, esophagitis, gastritis, enteritis, enterogastric intestinal hemorrhage, toxic epidermal necrolysis syndrome, Stevens Johnson syndrome, fibrotic conditions, bronchitis,
10 pneumonia, pharyngitis, common cold, ear infections, sore throat, sexually transmitted diseases, inflammatory bowel disease, colitis, hemorrhoids, thrush, dental conditions, oral conditions, conjunctivitis, periodontal conditions, combinations thereof and combinations thereof.

15 35. The method of claim 22, wherein the condition comprises cancer.

 36. The method of claim 35, wherein the cancer is selected from the group consisting of tumors, hematologic malignancies and combinations thereof.

20 37. The method of claim 22, wherein the area of the subject is selected from the group consisting of a hyperplastic tissue, a tumor tissue, a cancerous lesion and combinations thereof.

 38. The method of claim 37, wherein the method induces apoptosis at the area
25 of the subject.

 39. The method of claim 37, wherein the method modulates matrix metalloproteinases at the area of the subject.

30 40. The method of claim 1, wherein the condition is selected from skin conditions, integument conditions and combinations thereof.

41. The method of claim 40, wherein the condition is selected from the group consisting of bacterial conditions, microbial conditions, inflammatory conditions, fungal conditions, viral conditions, autoimmune conditions, idiopathic conditions,
5 hyperproliferative conditions, noncancerous growths, cancerous conditions and combinations thereof.

42. The method of claim 40, wherein the condition is selected from the group consisting of a burn, eczema, erythroderma, an insect bite, mycosis fungoides, pyoderma
10 gangrenosum, erythema multiforme, rosacea, onychomycosis, acne, psoriasis, Reiter's syndrome, pityriasis rubra pilaris, hyperpigmentation, vitiligo, hypertrophic scarring, keloid, lichen planus, age related skin disorders, hyperproliferative variants of the disorders of keratinization and combinations thereof.

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